

PIERCE'S DISEASE AND GWSS

Scientific name of GWSS: *Homalodisca coagulata*

Description of GWSS: Adults are 1/2-inch long, dark brown color with small yellow dots on head and thorax. Wing membranous, translucent, with reddish veins.

How damage is caused: GWSS is a sucking insect that extracts fluid from host plants. This feeding can spread lethal diseases to host plants just as mosquitoes can transmit malaria in humans. The pest is highly mobile and can feed on and spread disease to many plants in a day.

Bacterium spread by GWSS: *Xylella fastidiosa*

Diseases* vectored by GWSS
(strains of *Xylella fastidiosa*):

- Pierce's Disease (grapes)
- Almond leg scorch (almonds)
- Alfalfa dwarf (alfalfa)
- Oleander leaf scorch (oleander)
- Phony peach disease (peaches)
- Plum leaf scald (plums)
- Citrus variegated chlorosis (citrus)

How disease kills plants: The bacterium attacks a plant's xylem (water-conducting vessels), clogging it

How long Pierce's disease has been in state: Since at least the 1880s, when it wiped out 40,000 acres of winegrapes in the Los Angeles Basin

GWSS host plants: Over 100 species of plants

GWSS first sighted in California: 1989

Distribution: Southeastern United States and northeastern Mexico.
Range has extended into southern and central California

Number of counties with GWSS-infested areas (2004): **14:** Fresno, Imperial, Kern, Los Angeles, Orange, Riverside, Sacramento, San Bernardino, San Diego, Santa Barbara, Santa Clara, Solano, Tulare, Ventura

Threat to state: \$14 billion in farmgate value of affected crops

For more information, contact Brown-Miller Communications at (925) 370-9777 or bmc@brownmillerpr.com



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* partial disease list

The Fight Against Pierce's Disease and the Glassy-Winged Sharpshooter *Industry and Government Working Together*

It wasn't a battle anyone was looking for or even expected. A small bug, the glassy-winged sharpshooter (GWSS), an invader from outside the state, seemed like a rather benign pest when first discovered in Southern California in the early 1990s.

But in 1999, grape vines started dying on a massive scale in Temecula. A century old wine industry foe, Pierce's Disease (PD), was hitting the area hard. It had long been known that native sharpshooters carried PD but generally did not cause widespread epidemics. However, that wasn't true of the newly introduced GWSS. In a short time it had spread the disease throughout the vineyards of Temecula and was poised to do the same throughout California, seriously jeopardizing the state's \$45 billion wine and grape industry.

Winegrape growers throughout California formed alliances to find ways to halt the spread of the GWSS and to find a treatment for the Pierce's Disease it was carrying. Measures were quickly put in place to control and contain the spread of the disease, and the state government authorized emergency funds for containment programs and research. But industry leaders soon recognized that containment of the GWSS was only a short-term answer. The real solution

would be to find a cure or treatment for PD.

In 1999, the California Department of Food and Agriculture appointed the Pierce's Disease Advisory Task Force to advise the Department on research and management of PD/GWSS. In 2001, winegrape growers aggressively lobbied for Assembly Bill 1394 to establish an assessment on themselves to fund research, with an advisory board (the Pierce's Disease and Glassy-Winged Sharpshooter Board) also created to recommend how the assessment was used. The 15-member board, comprised of winegrape and vintner growers, develops recommendations for spending the approximately \$4 million raised each year by the assessment, directing those funds to promising research projects and other program activities that will most benefit the industry.

To date the assessment has raised approximately \$14 million and funded nearly 100 research projects. But perhaps even more importantly, the assessment has been a catalyst for raising other monies to help in the fight against PD/GWSS. Legislators charged with approving additional funds recognize the importance of the industry's initiative in assessing itself, indicating that the growers are taking this fight seriously and deserve the government's help.

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Pierce's Disease

Pierce's Disease has been present in California since 1884. Caused by a strain of the bacterium *Xylella fastidiosa*, Pierce's Disease kills grapevines by clogging their water-conducting vessels (xylem). The Disease has caused sizable losses in California viticulture in the past, but the damage occurred primarily in traditional "hotspot" areas. Until recently, the damage was not severe enough to completely prevent grape production in affected areas.

The situation changed dramatically with the arrival of the Glassy-Winged Sharpshooter (GWSS) in the 1990s. GWSS is native to the southeastern United States and northeastern Mexico. It feeds on the xylem fluid of a large number of plants. The Sharpshooter builds up large populations on a diverse array of host plants and is an aggressive flyer, traveling greater distances than native Sharpshooters.

Viticulture in traditionally safe-growing regions is now at risk from the Disease. California's first indication of the severe risk posed by this new disease and vector combination occurred in Temecula, Riverside County, in August 1999, when over 300 acres of grapevines infested with the Glassy-Winged Sharpshooter were destroyed by Pierce's Disease. Counting only grapes, the Disease now threatens a crop production value of \$3.2 billion and associated economic activity in excess of \$33 billion. Other crop and ornamental plant resources, such as almonds (\$897 million) and susceptible species of citrus (\$1.07 billion), stone fruits (\$905 million) and shade trees, are also at risk, either from the Pierce's Disease strain of the bacterium or from related strains found elsewhere in the world.

Scientists believe that the Glassy-Winged Sharpshooter has the potential to increase both the incidence and severity of Pierce's Disease in California. The combination of Pierce's Disease and the Glassy-Winged Sharpshooter constitutes an unprecedented threat to California's multi-billion dollar grape and wine industry as well as to almonds, oleander, and other crop and ornamental plants.

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SHARPSHOOTER IS A MULTIPLE THREAT

The Glassy-Winged Sharpshooter is a serious threat to the state's economy and ecology. This pest has the potential to seriously disrupt the state's agricultural economy and the 1.1 million jobs that are related to agriculture. But it also is a threat to the quality of life of all Californians and could imperil the state's native habitat.

The threat of the Glassy-Winged Sharpshooter and Pierce's Disease is widely known in the state's grape industry. The state's 450,000-plus acres of winegrapes are at risk of potential infection by Pierce's Disease. More than 330,000 acres of raisin and table grapevines are also in jeopardy. The



GWSS is an effective vector for Pierce's disease because it is more mobile than other leafhoppers that can transmit the bacteria. The insect uses its needle-like mouth to tap into the water-conducting tissues of a plant.

In addition to its mobility and its varied food sources, it is dangerous because of its ability to move a large quantity of plant juices (equivalent to a 150-pound human drinking 4,300 gallons of water a day) through its system in a day. In feeding on plants, the pest can infect them with lethal diseases, such as Pierce's Disease in grapevines.

Because of the Sharpshooter's mobility and voracious feeding habits, the threat is not only to vineyards but also to other crops such as almonds, citrus and peaches. The bacterium *Xylella fastidiosa* that causes Pierce's Disease also causes serious diseases in other plants that host the Sharpshooter.

The GWSS host list includes more than 100 species of plants. These include commercial crops such as almonds, citrus, peaches, plums, alfalfa and many ornamental plants produced by the state's commercial nursery industry. The combination of Pierce's Disease and a highly mobile vector creates a dynamic and dangerous situation for Californians. Agricultural crops are the most visible and quantifiable targets, but decorative plants, landscaping, highway medians and other non-agricultural plantings are also at risk.

The Sharpshooter threatens native plants, shrubs and trees. The natural habitat of the Glassy-Winged Sharpshooter in the southeastern United States is forest margins. In coastal California and in the Sierra Nevada, riparian woodlands may prove to be suitable habitat for Sharpshooters. As a "generalist" feeder that has expanded its geographic range into new territory, local populations of the Sharpshooter can be expected to progressively adapt to local conditions and to new host plants.

For more information, contact Brown-Miller Communications at (925) 370-9777 or bmc@brownmillerpr.com



WEB SITES

The Internet offers a wealth of information about the glassy-winged sharpshooter and Pierce's disease. The list of useful sites below provides links to others that you may find helpful in your news coverage.

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

News, information, host lists

<http://www.cdfa.ca.gov/phppps/pdcp/>

CALIFORNIA FARM BUREAU FEDERATION

Information, photos, online media directory

www.cfbf.com/issues/gwss

UNIVERSITY OF CALIFORNIA

Information, online media kit, photos

<http://danr.ucop.edu/news/MediaKit/GWSS.shtml>

www.ucr.edu/news/gwss

www.cnr.berkeley.edu/xylella/

<http://ucceventura.xlrn.ucsb.edu/IPM/IPMHome.htm>

CALIFORNIA ALMOND BOARD

Industry news and information

www.almondboard.com

CALIFORNIA ASSOCIATION OF WINEGRAPE GROWERS

Industry news and information

www.cawg.org/news/index.htm

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION

www.cdpr.ca.gov/docs/counties/cacelist.htm

NAPA VALLEY GRAPE GROWERS ASSOCIATION

Industry News

www.napagrowers.org

WINE INSTITUTE

Industry news and information

www.wineinstitute.org

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<http://www.cdfa.ca.gov/exec/cl/countyagmap.htm>

(refer to the Web site for listings of specific counties)

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